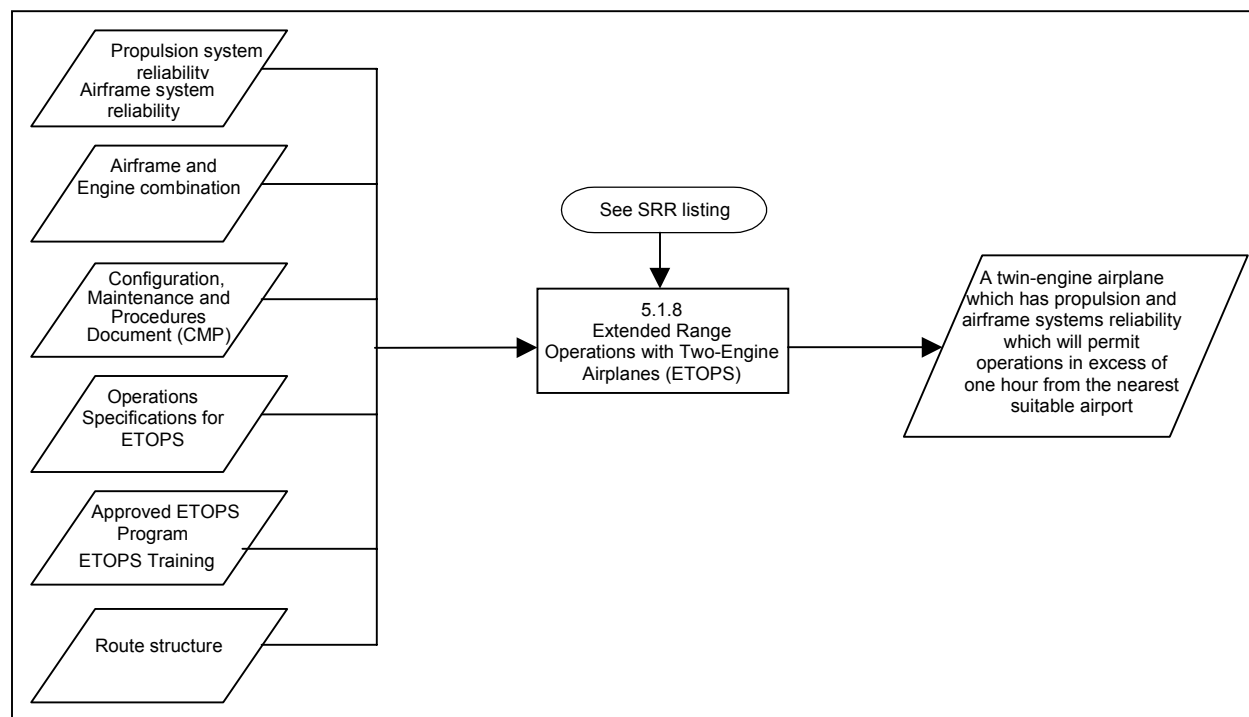


Safety Attribute Inspection (SAI) Job Aid



ELEMENT SUMMARY INFORMATION

Element: 5.1.8 Extended Range Operation with Two-Engine Airplanes (ETOPS)

Purpose of the Element: (Air Carrier's responsibility): To ensure continuous safe and reliable operations in accordance with the air carrier's ETOPS authorization.

Objective (FAA responsibility): To determine if the air carrier's ETOPS program includes safety attributes.

Inputs:

- Propulsion System Reliability
- Airframe System Reliability
- Airframe and Engine Combination
- Configuration, Maintenance, and Procedures Document (CMP)
- Operations Specifications for ETOPS
- Approved ETOPS Program
- ETOPS Training
- Route Structure

Outputs:

- A twin-engine airplane which has propulsion and airframe systems reliability which will permit operations in excess of one hour from the nearest suitable airport as defined in appropriate Advisory Circulars.

Safety Attribute Inspection (SAI) Job Aid

Performance Measures:

- The Air Carrier meets the requirements of appropriate Advisory Circulars for, “Extended Range Operation with Two-Engine Airplanes (ETOPS).”
- The Air Carrier meets the requirements of their approved ETOPS program.
- The Air Carrier meets the requirements of the Operations Specifications for ETOPS.

Safety Attribute Inspection (SAI) Job Aid

SRR:

There are no specific regulatory requirements. Extended Range Operation with Two-Engine Airplanes (ETOPS) is a deviation from 14 CFR 121.161(a).

Other CFRs and/or FAA Guidance:

- 14 CFR 121.161(a) Airplane Limitations: Type of Route.
- 14 CFR 121.197 Airplanes: Turbine engine powered: Landing limitations: Alternate airports.
- 14 CFR 21.3 “Reporting of Failure, Malfunctions and Defects”
- 14 CFR 25.901 Installation.
- 14 CFR 25.903 Engines
- 14 CFR 25.1309 Equipment, systems, and installations.
- 14 CFR 33.19 Durability
- 14 CFR 33.75 Safety analysis
- FAA Order 8300.10, Vol. 2, Chapter 82 “Evaluate FAR Part 121 Extended-Range Operations with Two-Engine Aircraft (ETOPS)”
- FAA Order 8300.10, Vol. 3, Chapter 43 “Monitor FAR Part 121 Extended-Range Operations with Two-Engine Aircraft (ETOPS)”
- HBAW 94-03: “Engine Change and Verification Flights for Extended Range Operation with Two-Engine Airplanes (ETOPS) – Guidance for Operations.”
- HBAW 94-08: “Policy Changes to the ETOPS Configuration, Maintenance and Procedures Documents.”
- HBAW 97-03 “Auxiliary Power Unit (APU) Data Collection”
- HBAW 98-21 Relief of Icing Fuel Penalties Associated with Critical Fuel Calculations for ETOPS.
- HBAW 94-09 “Engine Change and Verification Flights for Extended Range Operation with Two-Engine Airplanes (ETOPS) – Guidance for Operations”
- HBAW 97-04 “Auxiliary Power Unit (APU) Data Collection”
- Operations Specifications paragraph D086
- ETOPS Policy Letter EPL 95-1, dated DEC 19, 1994
- Refer to Advisory Circulars using a search engine (such as ATP Navigator or Summit)

Safety Attribute Inspection (SAI) Job Aid

SRR SPECIFIC INFORMATION

There are no specific regulatory requirements. Extended Range Operation with Two-Engine Airplanes (ETOPS) is a deviation from 14 CFR 121.161(a).

Safety Attribute Inspection (SAI) Job Aid

5.1.8 Extended Range Operations with Two-Engine Airplanes (ETOPS)

SECTION 1 - RESPONSIBILITY ATTRIBUTE

Objective: To determine if there is a clearly identifiable, qualified, and knowledgeable person who is accountable for the quality of the ETOPS program.

To meet this objective, the inspector will accomplish the following tasks:

1. Identify the person who is responsible for the quality of the ETOPS program.
2. Review the description in the Manual that delineates the duties and responsibilities of the person.
3. Evaluate the person's qualifications and work experience (or resume, if appropriate).
4. Review the appropriate organizational chart.
5. Discuss the ETOPS program with the person.

To meet this objective, the inspector will answer the following questions:

1. Is there a clearly identifiable person who is answerable for the quality of the ETOPS program?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If yes, provide the name: If no, explain:
2. Does the person understand the procedures associated with the ETOPS program?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
3. Does the person understand the controls associated with the ETOPS program?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
4. Does the person understand the interfaces associated with the ETOPS program?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
5. Does the person understand the process measurements associated with the ETOPS program?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
6. Is the responsibility of this position clearly documented in the air carrier's Manual(s)?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
7. Are the qualification standards for this position clearly documented?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
7a Are the qualification standards for this position appropriate for the duties that are assigned?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
8. Does the person meet the qualification standards?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
9. Does the person acknowledge that he/she has responsibility for the ETOPS program?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
10. Does the person know who has authority to establish and modify the ETOPS program?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:

Safety Attribute Inspection (SAI) Job Aid

5.1.8 Extended Range Operations with Two-Engine Airplanes (ETOPS)

SECTION 2 - AUTHORITY ATTRIBUTE

Objective: To determine if there is a clearly identifiable, qualified, and knowledgeable person with the authority to establish and modify the ETOPS program.

To meet this objective, the inspector will accomplish the following tasks:

1. Identify the person who has the authority to establish or modify the ETOPS program.
2. Review the description in the Manual that delineates the duties and responsibilities of the person.
3. Evaluate the person's qualifications and work experience (or resume', if appropriate).
4. Review the appropriate organizational chart.
5. Discuss the ETOPS program with the person.

To meet this objective, the inspector will answer the following questions:

1. Is there a clearly identifiable person who has authority to establish and modify the air carrier's policies for the ETOPS program?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If yes, provide the name: If no, explain:
2. Does the person understand the procedures associated with the ETOPS program?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
3. Does the person understand the controls associated with the ETOPS program?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
4. Does the person understand the interfaces associated with the ETOPS program?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
5. Does the person understand the process measurements associated with the ETOPS program?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
6. Is the authority of this position clearly documented in the air carrier's Manual(s)?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
7. Are the qualification standards for this position clearly documented?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
7a. Are the qualification standards for this position appropriate for the duties that are assigned?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
8. Does the person meet the qualification standards?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
9. Does the person acknowledge that he/she has authority for the ETOPS program?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
10. Does the person know who has the responsibility for the ETOPS program?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
11. Are the procedures for delegation of authority clearly documented for the ETOPS program?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:

Safety Attribute Inspection (SAI) Job Aid

5.1.8 Extended Range Operations with Two-Engine Airplanes (ETOPS)

SECTION 3 - PROCEDURES ATTRIBUTE

Objective: To determine if the air carrier has documented procedures for accomplishing the ETOPS program.

To meet this objective, the inspector will accomplish the following tasks:

1. Review the documented instructions and information related to the ETOPS program to ensure they contain who, what, where, when, and how.
2. Review the FAA Guidance and Specific Regulatory Requirements (SRR) included in the supplemental information section of this SAI.
3. Discuss the ETOPS program with appropriate personnel to gain an understanding of the procedures.
4. Observe the ETOPS program to gain an understanding of the procedures.

To meet this objective, the inspector will answer the following questions:

1. Do written procedures exist to achieve the desired result of the ETOPS program:

1.1 Do written procedures require use of a Configuration, Maintenance, and Procedures document for maintaining ETOPS aircraft?

☐ YES
☐ NO

If no, explain:

1.2 Do written procedures provide detailed instructions and information for the ETOPS program?

☐ YES
☐ NO

If no, explain:

1.3 Do written procedures require use of the ETOPS training curriculum when qualifying personnel for ETOPS?

☐ YES
☐ NO

If no, explain:

1.4 Do written procedures describe a method of segregating ETOPS qualified parts and components from the remaining fleet parts and components?

☐ YES
☐ NO

If no, explain:

1.5 Do written procedures require use of the ETOPS service check immediately before an ETOPS flight departure?

☐ YES
☐ NO

If no, explain:

1.6 Do written procedures require that ETOPS service checks are performed by ETOPS qualified maintenance personnel?

☐ YES
☐ NO

If no, explain:

2. Do the procedures identify: who, what, where, when and how?

☐ YES
☐ NO

If no, explain:

3. Are the procedures in compliance with the CFR(s)?

☐ YES
☐ NO

If no, explain:

4. Do the procedures conform to other written guidance? (E.g., Operations Specifications, FAA Orders, Airworthiness Directives, Advisory Circulars, Handbook Bulletins, Directives, and Manufacturers Recommendations).

☐ YES
☐ NO

If no, explain:

Safety Attribute Inspection (SAI) Job Aid

5.1.8 Extended Range Operations with Two-Engine Airplanes (ETOPS)

SECTION 3 - PROCEDURES ATTRIBUTE

5. Does the air carrier have the resources to support the written procedures for the ETOPS program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
6. If alternate procedures exist for use during irregular conditions, do they achieve the same desired result as the primary procedures so that an equivalent level of safety is maintained? (e.g., a manual system used as a result of equipment failure).	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A, No alternate procedures exist for this element
7. Are the procedures published in different manuals relating to the ETOPS program consistent?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
8. Does the air carrier have a documented method for assessing the impacts of procedural changes to the ETOPS program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO

Safety Attribute Inspection (SAI) Job Aid

5.1.8 Extended Range Operations with Two-Engine Airplanes (ETOPS)

SECTION 4 - CONTROL ATTRIBUTE

Objective: To determine if checks and restraints are designed into the ETOPS program to ensure a desired result is achieved.

To meet this objective, the inspector will accomplish the following tasks:

1. Review the documented instructions and information related to the ETOPS program.
2. Review the FAA Guidance and Specific Regulatory Requirements (SRR) included in the supplemental information section of this SAI.
3. Discuss the ETOPS program with appropriate personnel to gain an understanding of the controls.
4. Observe the ETOPS program to gain an understanding of the controls.

To meet this objective, the inspector will answer the following questions:

1. Are the following checks and restraints built into the ETOPS program:

1.1 Does the Air Carrier have and maintain a Configuration, Maintenance, and Procedures document that meets or exceeds the standards contained in appropriate Advisory Circulars?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.2 Does the Air Carrier have Operations Specifications authorizing ETOPS program?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.3 Do the Air Carrier's procedures meet or exceed the standards referenced in the following:		
1.3.1 HBAW 97-03, Auxiliary Power Unit Data Collection?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.3.2 HBAW 94-03, Engine Change and Verification Flights for ETOPS?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.3.3 HBAW 94-08, Policy Changes to the ETOPS Configuration, Maintenance, and Procedures Documents?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.4 Does the Air Carrier notify the Certificate Holding District Office each time an ETOPS aircraft does not meet the maintenance requirements in the CMP?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.5 Does the Air Carrier limit ETOPS operation to aircraft that are identified on Operations Specifications Paragraph D086?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.6 Does the Air Carrier segregate ETOPS qualified parts and components from other fleet parts and components?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.7 Does the Air Carrier require a sixty-minute verification flight whenever maintenance is performed that can affect an ETOPS qualified system?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:

Safety Attribute Inspection (SAI) Job Aid

5.1.8 Extended Range Operations with Two-Engine Airplanes (ETOPS)

SECTION 4 - CONTROL ATTRIBUTE

1.8 Does the Air Carrier have and maintain a pre-departure checklist for each ETOPS originating flight?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.9 Does the Air Carrier have and maintain a training program curriculum for the personnel performing maintenance on ETOPS qualified aircraft?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.10 Does the Air Carrier have and maintain an ETOPS reliability program (or supplements to their existing reliability program) that requires the recording, analysis, and correction of the items specified in appropriate Advisory Circulars?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.11 Does the Air Carrier have and maintain a list of qualified ETOPS maintenance personnel?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.12 Does the Air Carrier prohibit an ETOPS flight if identical maintenance actions have been performed on both engines or to multiple similar elements in ETOPS critical systems?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
2. Do the checks and restraints ensure the desired result is achieved for the ETOPS program?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
3. Does the air carrier have a documented method for assessing the impacts of any changes made to the checks and restraints in the ETOPS program?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
4. Does the air carrier have the resources to support the checks and restraints for the ETOPS program?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:

Safety Attribute Inspection (SAI) Job Aid

5.1.8 Extended Range Operations with Two-Engine Airplanes (ETOPS)

SECTION 5 - PROCESS MEASUREMENT ATTRIBUTE

Objective: To determine if the air carrier measures and assesses the ETOPS program, to identify and correct problems or potential problems.

To meet this objective, the inspector will accomplish the following tasks:

1. Review the documented instructions and information related to the ETOPS program.
2. Discuss the ETOPS program with appropriate personnel to gain an understanding of the process measures.
3. Observe the ETOPS program to gain an understanding of the process measures.

To meet this objective, the inspector will answer the following questions:

1. <Deleted>

2. Does the air carrier's ETOPS program include the following process measurements?

2.1 *The Air Carrier audits the ETOPS program to ensure that it complies with the approved ETOPS program and the Operations Specifications.*

☐ YES
☐ NO

If no, explain:

3. Does the air carrier document their process measurement methods and results?

☐ YES
☐ NO

If no, explain:

4. Are the air carrier's process measurement methods effective?

☐ YES
☐ NO

If no, explain:

5. Does the air carrier use their process measurement results to improve their programs?

☐ YES
☐ NO

If no, explain:

6. Are the process measurement results accessible to the FAA?

☐ YES
☐ NO

If no, explain:

7. Does the organization that conducts the process measurement have direct access to the person with responsibility for the ETOPS program?

☐ YES
☐ NO

If no, explain:

8. Does the air carrier have the resources to support the process measurement for the ETOPS program?

☐ YES
☐ NO

If no, explain:

Safety Attribute Inspection (SAI) Job Aid

5.1.8 Extended Range Operations with Two-Engine Airplanes (ETOPS)

SECTION 6 - INTERFACES ATTRIBUTE

Objective: To determine if the Air Carrier identifies and manages the interactions between the ETOPS program and the other element processes within the Air Carrier organization.

To meet this objective, the inspector will accomplish and record the following tasks:

1. Review the documented instructions and information related to the ETOPS program.
2. Discuss the ETOPS program with appropriate personnel to gain an understanding of the interfaces.
3. Observe the ETOPS program to gain an understanding of the interfaces.

To meet this objective, the inspector will answer the following questions:

1. Are the following interfaces identified for the ETOPS program:

1.1 Maintenance Program (Element 1.3.1)	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.2 Inspection Program (Element 1.3.2)	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.3 Appropriate Operational Equipment (Element 1.1.2)	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.4 Airworthiness Release or Log Book Entry (Element 1.2.1)	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.5 RII (Element 1.3.4)	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.6 MEL/CDL/Deferred Maintenance (Element 1.3.5)	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.7 Outsource Organization (Element 1.3.7)	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.8 Control of Calibrated Tools and Test Equipment (Element 1.3.8)	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.9 Parts/Material Control/SUP (Element 1.3.10)	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.10 Continuous Analysis and Surveillance (Element 1.3.11)	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.11 GMM and/or Equivalent (Element 1.3.14)	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.12 Reliability Program (Element 1.3.15)	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:

Safety Attribute Inspection (SAI) Job Aid

5.1.8 Extended Range Operations with Two-Engine Airplanes (ETOPS)

SECTION 6 - INTERFACES ATTRIBUTE

1.13 (Manual) Currency (Element 2.1.1)	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.14 Content Consistency Across Manuals (Element 2.1.2)	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.15 Distribution (Element 2.1.3)	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.16 Availability (Element 2.1.4)	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.17 Supplemental Operations Manual Requirements (Element 2.1.5)	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.18 Maintenance Training Program (Element 4.2.1)	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.19 RII Training Requirements (Element 4.2.2)	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.20 Training of Crewmember (Element 4.2.3)	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.21 Training of Dispatcher (Element 4.2.5)	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
1.22 Safety Program (Element 7.2.1)	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
2. List any additional interfaces been identified:		
3. Are there written procedures for the use of air carrier personnel in the application of these interfaces?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
4. Are there controls to ensure that interfaces occur?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
5. Are the interfaces between the ETOPS program and other programs treated consistently in the Manual(s)?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain: